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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20530

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In the Matter of:

Allocation of Spectrum Below
5 GHz Transferred from Federal
Government Use

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ET Docket No. 94-32

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

COMMENTS

The Wireless Information Networks Forum, Inc. ("WINForum") respectfully submits its comments regarding the Notice of Proposed Rulemaking ("Notice") in the above-captioned proceeding.¹ WINForum strongly supports the reallocation of underutilized spectrum from the federal government to valuable non-federal uses. However, as discussed herein, WINForum has serious concerns regarding the auction-dependent approach proposed in the Notice for allocating the initial 50 MHz of transferred spectrum. In particular, WINForum believes that the proposed auctioning of spectrum currently shared by numerous users and products would plainly disserve the public interest.

I. INTRODUCTION

WINForum is an alliance of industrial, user, and research community members who are working together to obtain, and effectively employ, radio spectrum for user-provided voice and data services. Accordingly, WINForum shares the Commission's desire to assure that spectrum transferred from federal government use is allocated in a manner that maximizes efficiency and serves important needs. The Notice proposes to designate the

¹ FCC 94-272 (released Nov. 8, 1994).

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2390-2400, 2402-2417, and 4660-4685 MHz bands for a general fixed and mobile allocation, "rather than to specify these frequency bands for particular uses."² In doing so, the Notice suggests that the Commission should rely "substantially on market forces,"³ operating through the auction process, "to ensure that the spectrum is put to its best and most valued use and that the greatest benefit to the public is attained."⁴ Winning bidders would be given exclusive use of the channels within a specified geographic area, and would be free "to choose the channelization, signal strength, modulation techniques and antenna characteristics they employ in providing service"⁵

Although WINForum supports the Commission's efforts to promote expeditious use of the newly available spectrum, it has two significant concerns with the approach set forth in the Notice. The first relates to the costs and benefits of displacing current shared uses in the 2402-2417 MHz band, where heavy emissions from microwave ovens render non-spread spectrum, non-shared licensed uses highly problematic. The second involves the proposal to auction generally allocated spectrum, rather than to identify through Commission processes the services assigned to each frequency band. Against this background, WINForum believes the auction-dependent approach proposed in the Notice would destroy the utility of thousands

² Notice at ¶ 9.

³ Id.

⁴ Id. at ¶ 8.

⁵ Id. at ¶ 9. In fact, the only technical requirement proposed by the Commission is that mean field strength at service area borders not exceed 47 dBu.

of Part 15 devices in place in the 2.4 GHz band, impede innovation and technological development, and ignore important private user and unlicensed product needs.

II. **PART 15 USE OF THE 2.4 GHz BAND PRODUCES SIGNIFICANT PUBLIC INTEREST BENEFITS, AND THE THOUSANDS OF PRODUCTS AND APPLICATIONS USING THAT SPECTRUM SHOULD NOT BE COMPROMISED.**

In 1990, the FCC amended its rules to encourage use of the 2400-2483.5 MHz band by spread spectrum devices.⁶ That decision has yielded bountiful public interest benefits in several respects.

First, in reliance on that decision, manufacturers have developed a multitude of innovative, publicly beneficial unlicensed products employing these frequencies, which are now used by thousands of consumers, businesses, and institutions. These products include security monitoring equipment, alarm devices, digital cordless telephones, meter reading devices, and wireless local area networks.

New and advanced uses of this spectrum will be introduced shortly, including mobile computing and communications devices that will further important NII-related objectives.⁷ Moreover, many manufacturers are adapting Part 15 equipment designed for the 900 MHz band for use at 2.4 GHz, in light of the severe congestion at the lower frequencies.⁸ In

⁶ See Amendment of Parts 2 and 15 of the Rules with Regard to the Operation of Spread Spectrum Systems, 5 FCC Rcd 4123 (1990).

⁷ As Apple has noted, the majority of new product development in the computer and communications industry, and the creation of standards, is focused on the 2400 MHz ISM band. Apple Comments on NOI, at 2.

⁸ See, e.g., Apple Comments on NOI at 1-2; Itron Comments on NOI at 1.

combination, the availability of exciting new communications technologies and the migration of additional users to this band will assure increasingly intensive deployment of Part 15 devices at 2.4 GHz.

Second, Part 15 use of the 2.4 GHz band has promoted spectrum efficiency goals. The Part 15 approach requires shared use of available frequencies and robust tolerance of interference. Particularly against the heavy background of emissions from microwave ovens, this approach permits far greater use of this band.

Third, Part 15 use of the 2.4 GHz band has enhanced U.S. competitiveness. Frequencies in this band are allocated to unlicensed applications on a nearly world-wide basis, enabling domestic manufacturers to market their equipment abroad. Especially in light of the traditional pre-eminence of American manufacturers of wireless devices, this capability greatly enhances potential revenue streams, decreases unit costs, and contributes directly to a positive trade balance

Given the tremendous public interest benefits engendered by Part 15 use of the 2.4 GHz band, WINForum is deeply disturbed by the Commission's proposed approach to these frequencies. The Commission states that its auction-dependent proposal seeks to "promote economical prices for users and provide operators with incentives to develop and introduce innovative service features and technologies."⁹ WINForum respectfully submits, however, that these goals already are being well-served by Part 15 use of the 2.4 GHz band, and would be undermined if the Commission adopts its proposal.

⁹ Notice at ¶ 9.

As the Commission acknowledges, serious questions have been raised about the ability of Part 15 devices to co-exist with licensed uses.¹⁰ WINForum shares these concerns, particularly in the context of the proposed auction-dependent allocation. Under the Commission's approach, the same portion of the 2402-2417 MHz band could be used for different types of services in different parts of the country. Some of these uses might conceivably be consistent with continued Part 15 utilization, while others could be fundamentally inconsistent.

The resulting patchwork quilt of allocations and uses at 2402-2417 MHz would sharply diminish the utility of the 2.4 GHz band for Part 15 uses. If the Commission continued to allow Part 15 use of the lower part of the band, but prohibited interference with licensed services by Part 15 devices, users of those devices would face serious limitations. A device might be usable on those frequencies in one area, but create unacceptable interference a few miles away. This would preclude geographic portability, which is a key benefit of Part 15 devices. In contrast, if the Commission prohibits Part 15 use of 2402-2417 MHz¹¹ -- or if licensed deployment effectively prohibits such use in most areas -- the utility of the entire 2.4 GHz band for Part 15 applications will be sharply diminished.¹²

¹⁰ See Notice, Appendix D, at D-6, D-7.

¹¹ The Notice (at paragraph 18) seeks comment on just such a prohibition.

¹² As NTIA has recognized, emissions from microwave ovens are less prevalent in the lower part of the band than toward the center. Although the level at the lower part is still high enough to impair performance of licensed services, it permits satisfactory operation by spread spectrum devices. In contrast, emissions at the center of the band are consistently high, causing potential problems even for spread spectrum use. Because spread spectrum operations rely on frequency hopping, which in turn requires
(continued...)

In short, the auction-dependent approach in the Notice ignores both the major benefits of Part 15 use of the 2.4 GHz band and the very real problems associated with non-Part 15 use of those frequencies. Any rational cost/benefit analysis would demonstrate that compromising or eliminating Part 15 uses at 2.4 GHz would both negate those benefits and create massive costs simply to shoehorn in services that are ill-suited to the band because of the extremely high noise floor. Consequently, the Commission must assure that any new use of the frequencies between 2402-2417 MHz is consistent with continued part 15 use of the 2.4 GHz band.

III. THE PROPOSED RELIANCE ON COMPETITIVE BIDDING TO ALLOCATE SPECTRUM TO SPECIFIC SERVICES EXCEEDS THE COMMISSION'S AUCTION AUTHORITY.

WINForum respectfully submits that auction-dependent proposal set forth in the Notice contravenes the Commission's competitive bidding authority. In enacting Section 309(j)(7)(A) of the Act, Congress effectively barred the Commission from doing what it proposes:

In making a decision pursuant to Section 303(c) to assign a band of frequencies to a use for which licenses or permits will be issued pursuant to this subsection ... the Commission may not base a finding of public interest, convenience and necessity on the expectation of Federal revenues from the use of a system of competitive bidding.

Indeed, the Commission itself recognizes that its "authority under Section 309(j) to use competitive bidding is limited to awarding licenses and is not to be used for allocating

¹²(...continued)
transmission over a wide portion of the spectrum, the loss of the relatively clear channels at 2402-2417 MHz would severely degrade performance of Part 15 devices in the rest of the band.

spectrum."¹³ That, however, is precisely the effect of the Commission's proposal: the ultimate use of the spectrum will be determined through the auction process. Contrary to Congress's intent, the Commission improperly has presumed that the public interest will be served by the recognition of revenues for the government, and that the winning bidder will put the spectrum to its highest and best use.¹⁴

Congress has recognized that many highly beneficial uses of the spectrum, including public safety and the vast majority of Part 15 applications, would never be served if a competitive bidding process were substituted for record-based Commission decisions regarding the use of spectrum for diverse public interest purposes. In light of this recognition, Congress drew a clear and appropriate line: the Commission must assess the public interest of particular spectrum allocations without being enticed by the prospect of auction revenues. If a decision can be made, on that basis, to allocate spectrum to a service that meets the "auctionability" criteria set forth in Section 309(j), then -- and only then -- can the market be permitted to determine which bidder places the highest value on the spectrum. The Commission's proposal crosses this line.

¹³ Notice at note 24.

¹⁴ In this regard, WINForum disputes the Commission's assertion that the approach proposed here is similar to the one taken in ET Docket No. 92-9. See Notice at ¶ 8. In that Docket, the Commission first made a general allocation of 220 MHz to emerging technologies. Subsequently, however (or more accurately, in parallel), it held a traditional rulemaking that developed a record supporting an allocation of 140 MHz of the emerging technology spectrum to PCS. The current proposal would impermissibly forego this critical second step.

The proposed approach also is inconsistent with the Commission's auction authority in two other respects. First, Section 309(j)(7)(A) requires that the Commission "mak[e] a decision pursuant to Section 303(c)" to assign frequencies to a particular use. Section 303(c) directs the Commission to "[a]ssign bands of frequencies to the various classes of stations," a requirement that mandates allocation to particular services.¹⁵ Consequently, by proposing to allow the auction process to determine which frequencies should be used for which services, the Commission impermissibly has delegated to the marketplace its decision-making responsibility under Section 303(c).

Second, Section 309(j)(6)(E) provides that the grant of auction authority to the Commission should "not be construed to relieve the Commission of its obligation ... to continue to use engineering solutions, negotiation, threshold qualifications, service regulations, and other means in order to avoid mutual exclusivity." The Commission can only discharge these obligations in the context of allocations for particular services. The extreme freedom proposed in the Notice turns this direction on its head by virtually assuring mutual exclusivity, rather than seeking to avoid it.

III. CONCLUSION

For the foregoing reasons, WINForum urges the Commission to forego its auction-dependent proposal. Rather than allowing an auction to dictate future uses of this band, the Commission should establish specific service rules, as required by Congress. It should

¹⁵ Notably, Section 309(j)(6)(A) emphasizes that the grant of auction authority to the Commission is not intended to alter "spectrum allocation criteria and procedures established by other provisions of this Act."

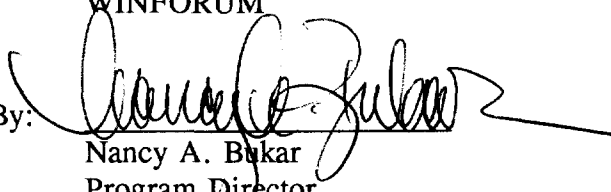
ensure, however, that any proposed use of the 2402-2417 MHz band be consistent with unimpaired Part 15 utilization of the existing 2.4 GHz allocation.

The Commission also should recognize that the hierarchical system used in the ISM bands is not a sound method for sharing and will generate additional conflicts. WINForum believes the optimum method is an etiquette-controlled, non-hierarchical approach, as is used in the 1910-1930 MHz unlicensed PCS spectrum. Under this approach, all users enjoy equal status, and sharing is accomplished by a listen-before-talk etiquette. WINForum looks forward to allocations of additional spectrum similar to the 1910-1930 MHz user PCS band.

Respectfully submitted,

WINFORUM

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